

Marine Fueling and Oil Transfer Practices for Covered Vessels and Ships in Washington

Interim Report to the Washington State Legislature



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Executive Summary

The 2004 Regular Session of the Washington State Legislature unanimously passed Substitute Senate Bill (SSB) 6641, which set a goal of zero oil spills in the waters of the state. It was recognized that the regulation and oversight of oil transfers on or near state waters vary widely. The Department of Ecology has initiated a review of current statewide oil transfer and marine fueling practices with the ultimate purpose of developing rules to safeguard oil transfers. A chartered Oil Transfer Operations Advisory Committee has been formed to assist the Department of Ecology with the studies and advise on the rulemaking. The Committee met once during 2004, and is scheduled to continue meeting throughout the rulemaking process. This is an interim report to the Legislature that documents the efforts to date.

Two initial recommendations are forwarded with this interim report:

- Recommendation 1: The Advisory Committee that has been established should continue to meet, study these issues, and advise Ecology on establishing a regulatory system for the fueling of covered vessels and ships. The efforts of this group will be documented in a final report to the Legislature, which will also include Ecology's conclusions on necessary regulatory improvements and new authorities.
- Recommendation 2: Industry groups and stakeholders should continue to provide the needed data on oil transfers so that meaningful, accurate conclusions and regulations can be developed.

Definitions Used in This Report

In some cases, there are significant differences between federal and state definitions in this document. This will be acknowledged where applicable.

Barrel - A quantity of liquid equal to 42 U.S. gallons.

Bulk - Material that is stored or transported in a loose, unpackaged liquid, powder, or granular form capable of being conveyed by a pipe, bucket, chute, or belt system.

Bulk Oil Transfer - In Washington State, a transfer of oil in any loose, unpackaged form capable of being moved in a pipe, bucket, chute, or belt system.

Bulk Oil Transfer - Under federal regulations, a transfer of 250 barrels (10,500 gallons) or more.

Bunkering - The transferring of petroleum fuel oil to a vessel for use in propulsion and other essential ship's operations. Explained in detail under "Current Oil Transfer Practices."

Captain of the Port (COTP) - The local U.S. Coast Guard authority who enforces federal regulations regarding marine transport, spill prevention and response, and maritime security issues.

Cargo - Material destined for sale.

Covered Vessel - In Washington State, any oil tank vessel and all cargo and passenger vessels equal to or greater than 300 gross tons.

Facility - In Washington State, this means any structure that is used to transfer bulk oil to or from a tank vessel or pipeline. This does not include either a railroad car or tank truck (mobile facilities) while transporting oil over the highways or rail lines of this state; nor does it include regulated underground storage tanks or marine fuel outlets that do not dispense more than 3,000 gallons of fuel to a ship that is not a tank vessel, cargo vessel, or passenger vessel in a single transaction.

Facility - Under federal regulations, means any structure that is or capable of being used to transfer oil to or from a vessel with an oil carrying capacity of 250 barrels or more. Examples: fixed facility and mobile facility.

Fuel - Oil used for propulsion and other essential ship operations.

Lightering - A ship-to-ship transfer of oil cargo not intended for propulsion. This is explained in detail under “Current Oil Transfer Practices”

Mobile facility - Any readily movable facility used to transfer oil to or from a vessel, such as a tank truck or railroad tank truck. Explained in detail under “Current Oil Transfer Practices.”

Oil - In Washington State, the definition of oil includes, but is not limited to crude oil, petroleum, gasoline, fuel oil, diesel oil, oil sludge, oil refuse, and oil mixed with wastes other than dredged spoils.

Person in Charge (PIC) - A person designated as a trained and knowledgeable person for purposes of conducting oil transfers. Explained in detail under “Current Federal Prevention Requirements for Vessels.”

Transfer - The movement of product. Transfers begin when the PICs of affected facilities and/or vessels meet for first time, and are completed when all transfer equipment is secured and the PICs meet for last time.

Ship - In Washington State, this means a boat, ship, vessel, barge, or other floating craft of any kind.

Summary of Legislation

The 2004 Regular Session of the Washington State Legislature unanimously passed Substitute Senate Bill (SSB) 6641, which finds “*that the primary objective of the state is to adopt a zero spills strategy to prevent any oil or hazardous substances from entering the waters of the state.*” Further, the Legislature recognized that the regulation of oil and fuel transfers near state waters varies widely, depending on many factors including the type of facility or equipment that is used, the type of products being transferred, where the transfer takes place, and the types of vessels involved in the transfer. The statute further directs Ecology to review current oil transfer practices, and existing prevention and response requirements, and to report recommendations for regulatory improvements and necessary new authorities to the Legislature. Ecology was directed to work with stakeholders on this study and rulemaking effort.

Revised Code of Washington Chapter 88.46 was also amended to direct Ecology to develop regulatory standards for requiring the deployment of containment boom prior to oil transfers when feasible, or other alternative prevention measures. The new regulations on oil transfers will be applicable to any person or facility conducting oil transfers to a ship. The statute also finds that it is the responsibility of the person providing the oil transfer or fueling services to provide the oil transfer safeguards. These requirements do not apply to recreational vessels.

Oil Transfer Operations Advisory Committee

The Oil Transfer Operations Advisory Committee was established to provide input and advice to Ecology on current oil transfer practices and necessary improvements to those practices that would safeguard oil transfers. The Advisory Committee has met once and will continue to meet at least quarterly from January 2005 through June 2006. Appendix A contains a membership list for the Advisory Committee.

Ecology staff will provide data, information, studies, and reports to assist the Advisory Committee with its deliberations. A rule writing process will begin in 2005 and be successfully completed by June 2006.

Current Oil Transfer Practices

Oil transfer operations always increase the risk of a spill. Marine environments are particularly sensitive to the impacts of an oil spill. When it is necessary to carry out oil transfer operations in marine environments, they must be done safely and carefully using proper equipment and procedures.

There are four general types of oil transfers that occur near water in Washington State:

- Facility to/from vessel transfers
- Mobile facility to/from vessel transfers

- Vessel to vessel transfers, including internal transfers
- Transfers involving non-covered ships

Each type of transfer has different requirements for a safe and efficient operation depending on the type of oil transferred, the equipment, size of the vessel(s) involved, the duration of the transfer, and the location where the transfer takes place. Each of the various types of oil transfers are described in detail below.

Facility to/from Vessel Transfers

Facility to/from vessel transfers refer to the movement of oil between a fixed shoreside facility and a vessel. Most facilities use rigid loading arms, often referred to as chik-sans, while others may use hoses. When hoses are used, a crane may be employed to hoist the hose between the facility and the vessel, since the hoses tend to be heavy.

Mobile Facility to/from Vessel Transfer

Mobile facility transfers refer to the movement of oil between a vessel and a mobile facility. Tank truck /vessel transfers are common in the maritime industry. A tank truck typically consists of a large-frame semi-trailer truck with a tank that can transport approximately 5,000 gallons. The transfer typically occurs on a pier or wharf with a small (4-6 inches) reinforced hose.

Vessel to Vessel Transfers

Vessel to vessel transfers refer to the movement of oil products from one vessel to another, either for cargo or the ship's own operational purposes. The three main types of vessel to vessel transfers are described below.

Bunkering is the transferring of fuel oil to a vessel from a shoreside facility (could include mobile facility) or from another vessel, usually a tank barge. Bunkering vessel-to-vessel (usually barge-to-ship) is quite common in Washington. Many marine terminals allow bunker barges to come alongside ships while at their cargo berths, thus allowing concurrent cargo and fueling operations. Bunkering can occur at anchorages; for example, there is frequent bunkering activity at the Port Angeles anchorage.

Lightering is a vessel-to-vessel transfer of cargo oil that typically occurs at anchor. Lightering procedures and locations are regulated by the U.S. Coast Guard and/or by local port authorities. Standards of care for lightering operations have been established for the Puget Sound and Columbia River.

Lightering operations in Puget Sound represent a small percentage of all oil transfers, although the volume of oil transferred can be quite large. The main purpose of lightering is to reduce the draft (depth of water needed to float) of the vessel being lightered, so that the vessel can float in the relatively shallow water at a cargo berth. For example, tankers drawing too much water to discharge their crude oil cargo at the refineries in Anacortes often discharge part of their cargo at

the deep water refinery berths at Cherry Point and Ferndale before proceeding to the refinery berths at Anacortes, which have shallower water alongside their piers. Lightering activity increased significantly during the temporary shut-down of the Olympic Pipeline after the 1999 pipeline spill and fire in Bellingham.

Internal oil transfers refer to the movement of oil, either as cargo or for the ship's use, from a tank(s) in a vessel to another tank(s) in the same vessel. The most common reason for internal cargo oil transfers on tank vessels is to adjust the trim or heel of the vessel to alter the draft, reduce hull stress, or improve vessel stability. On other types of ships, propulsion fuel is frequently transferred from fuel storage tanks to fuel purifiers that clean the fuel for the vessel's engines. Only certain tank vessels and larger ships that discharge oil residue and other potential oily waste have to record these transfers.

Transfers Involving Non-Regulated Ships

Non-regulated fuel transfers refer to the fueling of commercial vessels less than 300 gross tons and other non-commercial vessels. These transfers are commonplace, occur statewide, and usually take place at mooring terminals, marinas, or floating platforms near marinas. The cumulative impact of small spills occurring during small vessel fueling (considered non-point pollution) can be significant, because this type of spill is common and rarely reported to authorities. Point and non-point spills present a persistent problem due to the sheer number of such transfers that occur throughout Washington State and the cultural belief that a small sheen upon the water causes no harm to the environment. This issue was recently documented in the U.S. Commission on Ocean Policy's report, *An Ocean Blueprint for the 21st Century*.

Advance Notice of Oil Transfers

The Coast Guard Captain of the Port can require advanced notice of oil transfers. Both Portland and Puget Sound Coast Guard Marine Safety Offices require four hours' advance notice of bulk oil transfers. There are no Washington State requirements for advance notice. Ports and local fire departments may also require permits or advance notice of transfers. For example, both the Seattle and Port Angeles fire departments require notice of transfers within city limits. Seattle also requires a permit. A fee may be associated with the notice or permit requirements.

Memorandum of Agreement and Work Protocol

In 2001, Governor Gary Locke and Coast Guard Rear Admiral Erroll Brown signed a Memorandum of Agreement that resulted in an agreed work protocol to coordinate oil transfer monitoring. The purpose of this agreement is to allow the agencies to maximize resources, reduce duplication of efforts, and improve communications. Because of the regulatory differences between the federal and state definitions of covered "vessel" and "facility," the agencies have been unable to fully implement the oil transfer work protocol.

Data Gathering

Ecology is working with industry and others to gather a broad array of information and data concerning oil transfers and fueling practices. For example, there are some records available through the Coast Guard due to the advance notice requirement. Data concerning oil and fuel transfers will be gathered for as many years as possible in order to evaluate trends in these practices. The data and information will address:

- What type of oil is transferred, and in what volumes?
- Who transfers/receives? What response and prevention equipment is used?
- Where do these transfers occur?
- What causes oil transfer spills?
- What are the current federal and state regulations for spill prevention and preparedness?
Current practices within industry?
- What is industry doing voluntarily to prevent and prepare for spills, and can we improve on that initiative?

Currently there are enormous data gaps. Because the oversight of oil and fuel transfer practices varies widely, the available data is sometimes incomplete, incompatible, and in need of reconciliation. In addition, this type of data may be proprietary, and the sources of information have concerns about how the information will be presented. Ecology will focus on closing these gaps over the next several months.

Current State Spill Prevention Planning Requirements for Covered Vessels and Ships

The Department of Ecology Spills Program manages a non-regulatory prevention program for tank vessels. The voluntary standards for the safe and pollution-free operation of tank vessels, called the Voluntary Best Achievable Protection (VBAP) standards and the Exceptional Compliance Program (ECOPRO) standards, represent many of the best practices found throughout the world. The program is designed to reward tank ship and tank barge companies that voluntarily operate their covered vessels in compliance with VBAP or ECOPRO standards while in state waters. In addition, there are prevention requirements for other covered vessels contained in Chapters 317-10 and 317-31 Washington Administrative Code (WAC). Covered vessels must describe prevention measures to be taken during oil transfer operations in Washington waters.

Chapter 317-40 WAC, *Bunkering Operations* establishes minimum standards for safe bunkering operations. These rules emphasize safe procedures, planning, training, duties, and specify communications during transfers. These regulations apply only to self propelled covered vessels.

Current Federal Spill Prevention Planning Requirements for Covered Vessels and Ships

There are Coast Guard prevention planning requirements for vessels and the facilities that transfer to vessels. It is a complicated task to broadly summarize the federal requirements, which differ among ship types depending on length and gross tonnage. It is important to note that the regulatory definition of vessels and facilities differ between the federal and Washington State regulations. For example, the federal government sets spill prevention and response standards for mobile facilities that transfer oil to or from vessels, while the state does not.

The federal pollution prevention regulations specify requirements for safe oil transfers practices, including the pre-staging of discharge containment. There are requirements for record-keeping, drainage of oily mixtures, establishing the maximum cargo levels of tanks, emergency shutdown, and communication procedures. Certain oil tankers and ships must have oily water separators, pumping and piping systems diagrams, bilge monitoring, and alarm systems. There are federal regulations establishing requirements for bulk oil transfers from mobile facilities to or from vessels. These standards include a requirement for a minimum level of training, a relatively small discharge containment capacity, communication, and record keeping procedures.

Following is a specific example of the federal requirements for the “Person in Charge” (PIC), which is the designation for an individual who controls the transfer of oil to or from a vessel: One PIC is required for each side of the transfer process during the entire time the transfer is occurring. There must be a final meeting between the PICs after the transfer has been secured. The training and knowledge for designation as a PIC must include cargo transfer procedures, shipboard emergency procedures, notifications, and monitoring systems.

Current State Response Planning Requirements for Covered Vessels and Ships

All tank vessels and covered vessels are required to demonstrate their ability to respond to their potential worst case spills by developing spill response plans (approved by Ecology), testing the plans through drills, and hiring approved response contractors that commit to an immediate response to spills of all sizes. There are two relevant response planning regulations: Chapters 317-10 and 173-181 WAC. These regulations are currently open for rule-making. An Oil Spill Contingency Plan Rule Advisory Committee has been established by Ecology. The regulations set planning standards that establish the location of pre-staged spill response equipment throughout the state. The federal and state planning standards differ significantly, and are in

almost all cases more stringent at the state level. Drills that test the plans are evaluated in writing by Ecology, and at times these drills result in required updates to the plan or response capability of the plan holder. In contrast, drills required under the federal regulations are self-certified.

In Washington, there are two options for submitting vessel spill response plans. A company may develop a company-specific plan, or enroll as a member of a plan submitted by an organization that covers multiple companies and multiple vessel types. These plans are sometimes referred to as “Umbrella Plans.”

Current Federal Response Planning Requirements for Covered Vessels and Ships

Oil spill response plans are required for any vessel designed to carry oil in bulk as cargo, with exceptions for public vessels, response vessels, vessels in innocent passage, and fishing vessels of 750 tons or less. Recently this federal law was amended to include some cargo vessels, though new regulations to implement this law have not yet been established.

All response plans for vessels have to meet minimum general requirements, as well as specific requirements for certain vessel types and oil cargo types. Perhaps most importantly, a designated Qualified Individual (QI) must be identified within the plan. The QI is the person who knows the response plan and its implementation details, has full authority to allocate funds for response, and acts as a liaison with authorities during any oil spill event. The Qualified Individual(s) has to be available for contact 24 hours a day for this qualification.

Initial Recommendations

This is an interim report to the Legislature that documents the efforts to date. Further studies are needed before Ecology can report recommendations to the Legislature for regulatory improvements as found to be necessary. There are, however, two initial recommendations forwarded with this interim report.

Recommendation 1. The Advisory Committee that has been established should continue to meet, study these issues, and advise Ecology on establishing a regulatory system for the fueling of covered vessels and ships. The efforts of this group will be documented in a final report to the Legislature, which will also include Ecology’s conclusions on necessary regulatory improvements and new authorities.

Recommendation 2. Industry groups and stakeholders should continue to provide the needed data on oil transfers so that meaningful, accurate conclusions and regulations can be developed.

Estimated Timeline

It is anticipated that Ecology will begin the rule process in mid-2005. The rules will be successfully completed by June 2006. A final Legislative report containing recommendations will be delivered during September 2005.

APPENDIX A: Oil Transfer Operations Advisory Committee

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